

WHAT IS CLAIMED IS:

1. A heat exchanger comprising:

a core portion for performing heat exchange between an inside fluid and an outside fluid; and

tank portions connected to ends of the core portion,

wherein the core portion is made of resin and includes a plurality of heat exchanging plate portions, each of which forms inside fluid passages therein through which the inside fluid flows, and a holding portion, and the plurality of heat exchanging plate portions are layered with predetermined spaces therebetween and held by the holding portion,

wherein the heat exchanging plate portions and the holding portion are integrally formed.

2. The heat exchanger according to claim 1,

wherein the core portion is provided by a resinous extrusion.

3. The heat exchanger according to claim 1,

wherein each of the heat exchanging plate portions includes a base portion substantially in a form of plate and projection ribs projecting from the base portion,

wherein each of the projection ribs has one of a substantially trapezoidal-shaped cross-section and a substantially rectangular-shaped cross-section and forms the inside fluid passage therein.

4. The heat exchanger according to claim 3,

wherein the inside fluid passage has substantially a circular-shaped cross-section.

5. The heat exchanger according to claim 3,

wherein the projection ribs project from the base portion alternately in opposite directions, thereby forming waved outside fluid passages through which the outside fluid flows between the adjacent heat exchanging plates.

6. The heat exchanger according to claim 1,

wherein the tank portions are made of resin,

wherein each of the tank portions forms slits in which ends of the heat exchanging plate portions are received and a communication passage for allowing the slits to communicate in the tank portion.

7. The heat exchanger according to claim 6,

wherein the tank portions form communication ports through which the inside fluid is introduced into and discharged from the communication passages of the tank portions.

8. The heat exchanger according to claim 6,

wherein the tank portions have slanting surfaces at ends of the slits through which the ends of the heat exchanging plate portions are inserted.

9. The heat exchanger according to claim 1,

wherein the core portion and the tank portions are bonded.

10. The heat exchanger according to claim 1,
wherein the holding portion extends substantially perpendicular to longitudinal directions of the heat exchanging plate portions for holding the layered heat exchanging plate portions.

11. A method of manufacturing the heat exchanger of claim 1 comprising:

forming an extrusion body by extrusion of a resin material so that the extrusion body has end walls opposing each other and a plurality of heat exchanging plate portions perpendicular to the end walls between the end walls and the plurality of heat exchanging plate portions are layered with predetermined spaces therebetween; and

removing predetermined portions of the end walls so that the spaces defined between the adjacent heat exchanging plate portions are open in directions parallel to the heat exchanging plate portion and the heat exchanging plate portions are held by remaining portions of the end walls.